

Oxytocin: It's a mom and pop thing

August 20 2010

The hormone oxytocin has come under intensive study in light of emerging evidence that its release contributes to the social bonding that occurs between lovers, friends, and colleagues. Oxytocin also plays an important role in birth and maternal behavior, but until now, research had never addressed the involvement of oxytocin in the transition to fatherhood.

A fascinating new paper by Gordon and colleagues reports the first longitudinal data on [oxytocin](#) levels during the initiation of parenting in humans. They evaluated 160 first-time [parents](#) (80 couples) twice after the birth of their first child, at 6 weeks and 6 months, by measuring each parents' oxytocin levels and monitoring and coding their parenting behavior.

Three important findings emerged. At both time-points, fathers' oxytocin levels were not different from levels observed in mothers. Thus, although oxytocin release is stimulated by birth and lactation in mothers, it appears that other aspects of [parenthood](#) serve to stimulate oxytocin release in fathers.

Corresponding author Dr. Ruth Feldman noted that this finding "emphasizes the importance of providing opportunities for father-infant interactions immediately after [childbirth](#) in order to trigger the neuro-hormonal system that underlies bond formation in humans."

The neuroscientists also found a relationship between oxytocin levels in husbands and wives. Since oxytocin levels are highly stable within

individuals, this finding suggests that some mechanisms, perhaps social or hormonal factors, regulate oxytocin levels in an interactive way within couples.

Finally, the findings revealed that oxytocin levels were associated with parent-specific styles of interaction. Oxytocin was higher in mothers who provided more affectionate parenting, such as more gazing at the infant, expression of positive affect, and affectionate touch. In fathers, oxytocin was increased with more stimulatory contact, encouragement of exploration, and direction of infant attention to objects.

"It is very interesting that elevations in the same hormone were associated with different types of parenting behaviors in mothers and fathers even though the levels of oxytocin within couples were somewhat correlated. These differences may reflect the impact of culture-specific role expectations, but they also may be indicative of distinct circuit effects of oxytocin in the male and female brain," commented Dr. John Krystal, Editor of *Biological Psychiatry*.

These important findings may now provide a foundation for studies of disturbances in oxytocin function in high risk parenting.

More information: The article is "Oxytocin and the Development of Parenting in Humans" by Ilanit Gordon, Orna Zagoory-Sharon, James F. Leckman, and Ruth Feldman. Gordon, Zagoory-Sharon, and Feldman are affiliated with Bar-Ilan University, Ramat-Gan, Israel. Leckman and Feldman are affiliated with Yale University, New Haven, Connecticut. The study was supported by the US-Israel Bi-National Science Foundation. The article appears in *Biological Psychiatry*, Volume 68, Issue 4 (August 15, 2010).

Provided by Elsevier

Citation: Oxytocin: It's a mom and pop thing (2010, August 20) retrieved 19 April 2024 from <https://medicalxpress.com/news/2010-08-oxytocin-mom.html>

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